

REMARKS

Introduction

In response to the Office Action dated February 14, 2008, Applicants have amended claim 1. Support for amended claim 1 is found in, for example, Fig. 2 and pg. 13, lines 4-9. Care has been taken to avoid the introduction of new matter. In view of the foregoing amendments and the following remarks, Applicants respectfully submit that all pending claims are in condition for allowance.

Claim Rejection Under 35 U.S.C. § 103

Claims 1-9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,044,839 to Takahashi, in view of U.S. Patent No. 6,612,786 to Kanada et al. (“Kanada”), and further in view of U.S. Patent No. 5,707,187 to Mizutani. This rejection is traversed.

Amended claim 1 recites, in part, “...a pair of ridges reaching said chamfer, the pair of ridges are on the apex of said protrusion and are linear or arcuate.”

The Office Action asserts that Takashi teaches an insert having an upper surface with an apical angle part, having a polygonal shape in top view, and forming an edge and a chip breaker 7, where the chip breaker has a substantially symmetrical shape with respect to a section bisecting the apical angle of the apical angle part. The Office Action asserts that Takahashi also teaches a pair of arcuate ridges (R1 & R2) on the apex of the protrusion 6. The Office Action acknowledges that Takahashi fails to teach: an indexable insert where the insert is prepared by bonding a superhard sintered body containing cubic boron nitride to at least the upper surface of an apical angle part of the insert body; and a chamfer formed on the intersection between the

upper surface and the side surface. The Office Action relies on Kanada and Mizutani in an attempt to cure the deficiencies of Takahashi.

The Examiner contends that Kanada teaches an insert having a hard sintered polycrystalline body 11 containing a cubic crystal boron nitride bonded to the upper surface of an apical angle part of the insert of the body. The Office Action asserts that Kanada also teaches a negative land 14 that corresponds to the chamfer, where the negative land has an angle of 65 degrees or more to 125 degrees or less.

Kanada fails to disclose or suggest, a pair of ridges *reaching the chamfer* on the apex of a protrusion that is linear or arcuate, as required by amended claim 1. As Takahashi and Kanada do not disclose the same indexable insert as disclosed by the present inventors, and even if combined still fail to disclose or suggest the elements recited by amended claim 1, the combination of Takahashi and Kanada do not render the indexable insert as recited by amended claim 1 obvious.

The Office Action asserts that Mizutani also teaches a negative land/chamfer having an angle (θ) of 30-45 degrees. The Examiner concludes that Mizutani meets the limitation of 15 to no more than 45 degrees, as claimed in claim 3, and a width (L) of 0.05 to 0.40 mm, as claimed in claim 4. The Examiner contends that it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Takahashi such that it has a negative land corresponding to the chamfer, as taught by Mizutani for the purpose of having excellent cutting performance and extending the tool life.

Mizutani fails to disclose or suggest, a pair of ridges *reaching the chamfer* on the apex of a protrusion that is linear or arcuate, as required by amended claim 1. As Mizutani and Kanada do not disclose the same indexable insert as disclosed in the present application, and

even if combined still fail to disclose or suggest the elements recited by amended claim 1, the combination of Mizutani and Kanada do not render the indexable insert as recited by amended claim 1 obvious.

According to the claimed subject matter per amended claim 1, the ridges on the apex of the protrusion reach the chamfer of the indexable insert. Thereby, as taught in the instant specification, a pair of slopes is formed that has an adequate width under the ridges and the ridges have relatively long lengths to effectively discharge abatements by the slopes under various cutting conditions, (*see, e.g.*, Fig. 2 and pg. 13, lines 4-9). However, none of the references, disclose or suggest this, and apparently are unaware of the increased strength of the cutting edge and the improvement in the life of the indexable insert provided by the claimed indexable insert.

Obviousness can be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge readily available to one of ordinary skill in the art. *In re Kotzab*, 217 F.3d 1365, 1370 55 USPQ2d 1313, 1317 (Fed. Cir. 2000); *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). There is no suggestion in Kanada or Mizutani to modify the insert of Takahashi to include a chamfer, let alone suggest that the pair of ridges reach the chamfer, nor does common sense dictate the Examiner-asserted modifications. The Examiner has not provided any evidence that there would be any obvious benefit in making the asserted modification of Takahashi. *See KSR Int'l Co. v. Teleflex, Inc.*, 127 S.Ct. 1727, 82 USPQ2d 1385 (2007).

The only teaching of the pair of ridges reaching the chamfer is found in Applicants' disclosure. However, the teaching or suggestion to make a claimed combination and the reasonable expectation of success must not be based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The combination of Takahashi, Kanada, and Mizutani does not suggest the claimed indexable insert because Kanada and Mizutani do not cure the deficiencies of Takahashi. None of the references, individually or combined, disclose or suggest, "...a pair of ridges reaching said chamfer, the pair of ridges are on the apex of said protrusion and are linear or arcuate," as recited in amended claim 1.

Dependent claims 2-9 are allowable for at least the same reasons as independent claim 1, and further distinguish the claimed indexable insert.

Withdrawal of the foregoing rejection is respectfully requested.

Conclusion

In view of the above amendments and remarks, Applicants submit that this application should be allowed and the case passed to issue. If there are any questions regarding this Amendment or the application in general, a telephone call to the undersigned would be appreciated to expedite the prosecution of the application.

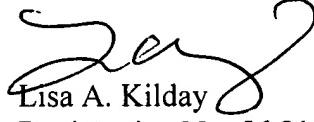
To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper,

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including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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